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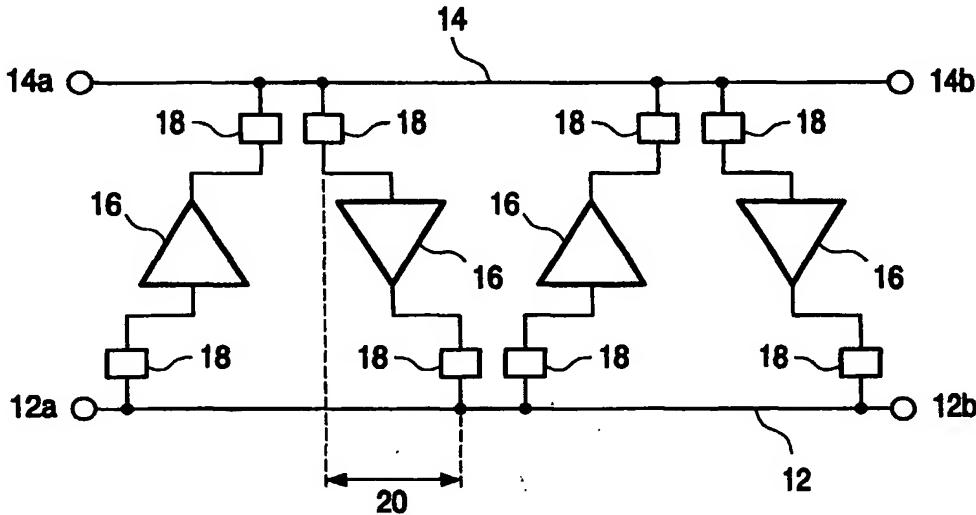
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(54) Title: TRAVELLING-WAVE AMPLIFIER



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(57) Abstract: The invention relates to a travelling-wave amplifier comprising amplifiers and transmission lines. The travelling-wave amplifier provides compensation for the losses of the transmission lines, amplification of the signals and isolation between input and output by coupling the amplifiers to the transmission lines anti-parallel.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**EPO-Internal**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 430 509 A (RAYTHEON CO) 5 June 1991 (1991-06-05) page 10, line 19 – page 11, line 41; figure 8 -----	1,2,4,5
A	US 5 550 513 A (WONG THOMAS Y) 27 August 1996 (1996-08-27) cited in the application column 4, line 49 – column 5, line 23; figures 2,3,5 -----	1,11



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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FORMATION ON PATENT FAMILY MEMBERS

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0430509	A	05-06-1991	EP	0430509 A2		05-06-1991
			JP	3188705 A		16-08-1991
			US	5105166 A		14-04-1992
US 5550513	A	27-08-1996	WO	9701219 A1		09-01-1997
			DE	69603369 D1		26-08-1999
			DE	69603369 T2		18-11-1999
			EP	0839407 A1		06-05-1998
			JP	10510970 T		20-10-1998
			JP	3188276 B2		16-07-2001